



TD74-FOP-CWT
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ORGANIZATIONAL ISSUANCE

TD74

EXPERIMENTAL FLUID DYNAMICS GROUP

Calibration Wind Tunnel (CWT) Facility Operating Procedure

Revision C

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DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
AS-IS	BASELINE	10/15/97	Baseline AS IS, Calibration Wind Tunnel Software Ver 1.0 Oct 22, 1992.
Revision	A	07/19/99	Due to the reorg this Baseline supersedes the document OWI-ED34-CWT-001 by the same title.
Revision	B	03/06/00	Separating Procedure from Reference material, and put into electronic form.
Revision	C	09/01/04	Updated due to CAITS 04-DA01-0387. Changed OWI identifier from TD74-CWT-001 to TD74-FOP-CWT to better express the type of document and to ease release under upcoming MSFC organizational transformation. Updated the title to reflect it is a Facility Operation Procedure.

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Calibration Wind Tunnel (CWT) Facility Operating Procedure

1.0 PURPOSE

This organizational issuance provides a Facility Operating Procedure for the Calibration Wind Tunnel (CWT) Test Facility in Building 4775.

2.0 APPLICABILITY

This Facility Operating Procedure applies only to the operation of the Calibration Wind Tunnel.

3.0 REFERENCE DOCUMENTS

Calibration Wind Tunnel Instruction Manual (Copyright October 22, 1992.) The manual is located in Room 110, Building 4732

4.0 DEFINITIONS

N/A

5.0 INSTRUCTIONS

The operator of the CWT shall perform the following test procedures in order to operate the CWT:

5.1 Leak check probe and label the pressure ports.

5.2 Installation and alignment of probe in Calibration Wind Tunnel

5.2.1 If the probe is not aligned with its own mounting fixture or one that does not have a level edge or surface, then the operator shall do the following:

5.2.1.1 Mount leveling block on probe shaft.

5.2.1.2 Optically align the pressure ports with the flat edges of the block.

5.2.1.3 Mount probe on the probe-holding clamp fixture, located in the test section.

5.2.1.4 Align the probe tip, at the center of the flow inlet section.

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5.2.1.5 Level the leveling block. The probe is now geometrically aligned.

5.2.2 If the probe has its own mounting fixture or level edge, then the operator shall to the following:

5.2.2.1 Align the probe tip, at the center of the flow inlet section.

5.2.2.2 Level the flat edge of the probe, or the mounting fixture. Probe is now geometrically aligned.

5.3 Set-up a calibration file in the CWT computer for the probe.

5.3.1 Input the appropriate test parameters, such as, barometric pressure, ambient temperature, and the calibration range for pitch and yaw, etc.

5.4 Flip switch that starts up the Calibration Wind Tunnel.

5.4.1 Input the frequency, or velocity, which is required for the calibration.

5.4.2 When calibration is complete, turn off the tunnel.

5.5 Acquire data and generate plots.

5.5.1 The raw and calculated data are stored on data files. Plots of the data are also generated.

5.6 The CWT operator shall return data, plots, and probe to the customer.

6.0 NOTES

N/A

7.0 SAFETY PRECAUTIONS AND WARNING NOTES

The operator of the CWT shall wear ear protection during operation of the CWT.

8.0 APPENDICES, DATA, REPORTS, AND FORMS

N/A

9.0 RECORDS

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Calibration Report Printout automatically generated by the software for each probe. The raw, and calculated data are transferred to data diskettes, which are kept with the tunnel operator. This data is also e-Mailed to the Engineers responsible for the test for incorporation into test Records controlled by another procedure.

10.0 TOOLS, EQUIPMENT, AND MATERIALS

The following items used for this facility operation procedure are located in building 4775:

- 10.1 The Calibration Wind Tunnel.
- 10.2 The probes, 3 and 5-hole.
- 10.3 The installed program software, along with CWT computer.
- 10.4 The probe software media is kept in it's Manual.
- 10.5 A toolbox with the probe mounting tools.

11.0 PERSONNEL TRAINING AND CERTIFICATION

A trained operator shall conduct CWT operations. The only trained operator at this time is George B. Gerry.

12.0 FLOW DIAGRAM

N/A